UNIVERSITY OF KABIANGA

NAME : GEOFREY KIPYEGO

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COURSE TITLE : COMPUTER NETWORKS

COURSE CODE : ISK 311

TASK : TAKE AWAY CAT

SUBMITTED TO : MR. GEOFREY SOWEK

Q1

i. A network is a collection of computers and transmission channels that allow people to communicate over both large and small distances, for example Bluetooth and Internet. On the other hand, the Internet refers to the largest network in existence on the planet, and consists of millions of connected computers and communication channels.

ii. Synchronous serial transmission is a mode of data transmission where bits are sent one after the other in a queue manner and timing has importance as there is no mechanism to recognize start and end data bits. Asynchronous serial transmission is a mode of serial data transmission where timing is of no significance.

Q2.

i. The type of network to be deployed should be a wireless Local Area Network (LAN) because it spans inside a building, offices, schools, and in this case, a boardroom.

ii. The type of cable to be used in one office should be the Unshielded Twisted Pair (UTP) cable because it consists of multiple pairs that can connect the number of computers that are in the office.

iii. The type of medium to link various blocks that are about 100 meters apart is the unguided transmission medium because there is no

physical connectivity between the computers to link different blocks as the unguided media are wireless and anyone can collect the information.

iv. Overally, the type of computer network that will be developed will be the Local Area Network (LAN). The following diagram is a sketch of the LAN network.

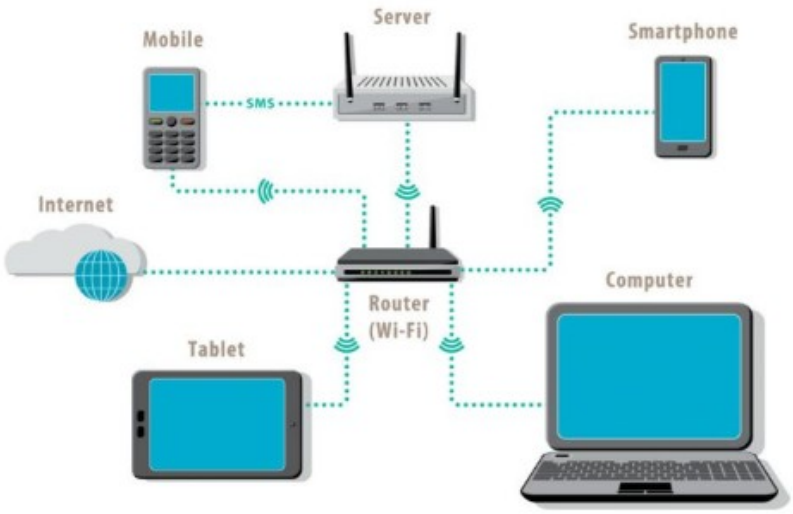

Image source: www.omnisci.com

- The electronic devices, that is, the computer, tablet, mobile and the smartphone access the internet via WiFi (router) so as to access some information on the server.

Q3.

I. IP addressing refers to the use of a unique address (IP address) in order to uniquely identify a device on an IP network.
II. In IP addressing classification, the IP protocol defines five different address classes. These are: A, B, C, D and E. Each of the first three classes A, B and C uses a different size for the network ID and host ID portion of the address. Class D is for a multicast address which is a special type of address. Class E is an experimental address class that is not used.
III. Sub netting involves taking bits from host part and reserving them to increase the length of network ID. One should first determine the number of bits that will provide the required subnetworks, then reserve the number of bits into the host part and find increment. The increment is used to get the subnetworks.

Q4.

The factors such as the cost or budget of setting up a network, the reliability of the network, hardware resources, size of network, ease of installation, ease of troubleshooting, bandwidth capacity and future expansion will affect the choice of network setup.